

What is claimed is:

1. An optical element manufacturing method, comprising:

a preparation step of preparing a lower mold having a lower mold surface for forming an optical function surface of an optical element to be manufactured and an upper mold having an upper mold surface for forming another optical function surface of the optical element, said lower mold having an outer shape restricting surface for the optical element or being combined with a member having the outer shape restricting surface, said upper mold being opposed to the lower mold;

a reference surface formation step of forming a positioning reference surface on a rim of the optical element by heating the outer shape restricting surface of the lower mold or combined with the lower mold and the lower mold surface and dropping molten glass onto the lower mold surface so as to collide with the lower mold surface and spread to be in contact with the outer shape restricting surface;

a pressing step of forming the two opposed optical function surfaces of the optical element by, after the formation of the reference surface, opposing the lower mold and the upper mold that is heated and bringing them relatively close to each other while the glass is still at a temperature at which it is deformable by pressing, and pressing the glass; and

an element taking out step of, after the pressing step, releasing the glass from the pressing by the upper and the lower molds and taking out the molded optical element,

wherein a temperature of the outer shape restricting surface in the reference surface formation step and the pressing step is higher than a temperature which is a difference when 100°C is subtracted from a glass transition temperature ($^{\circ}\text{C}$) of the glass.

2. An optical element manufacturing method as claimed in claim 1, wherein the lower mold has a restricting surface forming a second positioning reference surface of the optical element is formed in a region of the lower mold surface which region is outside an effective diameter surface.

3. An optical element manufacturing method as claimed in claim 2, wherein in the reference surface formation step, the second positioning reference surface is formed simultaneously with the formation of the positioning reference surface on the rim of the optical element.

4. An optical element manufacturing method as claimed in claim 1, wherein all of the steps are performed while target set temperatures in temperature control for heating the outer shape restricting surface, the lower mold surface and the upper mold surface are maintained constant.

5. An optical element manufacturing method as claimed in claim 1, wherein the method is a method of manufacturing an optical element in which a cross section, vertical to an optical axis of the optical element, of the positioning reference surface on the rim of the optical element is non-circular, and the outer shape reference surface is a surface where the positioning reference surface is formed.

6. An optical element manufacturing method as claimed in claim 1, wherein in the reference surface formation step, in dropping the molten glass, a drop amount adjustment member having a thin through hole formed therein is disposed on a

dropping path, and the glass is dropped so as to collide with the drop amount adjustment member so that at least part of the dropped glass is pushed out of the thin hole as a minute drop and drops onto the lower mold surface.